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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,619

08/16/2006

Shinji Yoshida

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08/21/2008

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EXAMINER

BRYANT, MICHAEL C

ART UNIT

PAPER NUMBER

2884

MAIL DATE

DELIVERY MODE

08/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,619	YOSHIDA ET AL.	
	Examiner	Art Unit	
	CASEY BRYANT	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,9 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,9 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. The current application is a national stage entry of PCT/JP04/01618 filed 2/16/2004.

Information Disclosure Statement

2. The IDS filed 8/16/2006 is current being considered.

Claim Objections

3. Claim 18 is objected to because of the following informalities: line 2 recites "whereinoxide" but should probably read -- wherein the metal oxide includes one of --. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 6, 9, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by **Char et al.** (WO 94/07270, published 31 March 1994).

With respect to claim 6, Char discloses a thermal resistor having a perovskite structure composed of $\text{La}_{1-x}\text{Sr}_x\text{TiO}_3$ (p. 16, lines 4-8).

With respect to claim 9, Char discloses a thermal resistor having a perovskite structure composed of $\text{La}_{1-x}\text{Sr}_x\text{NiO}_3$ (p. 16, lines 4-8).

With respect to claim 17, Char discloses a thermal resistor having a perovskite structure composed of $\text{Pr}_{1-x}\text{Ca}_x\text{MnO}_3$ to which a metal oxide having a perovskite structure is added including at least one of a rare earth metal expecting Pr and an alkaline earth metal excepting Ca (p. 16, lines 4-13).

With respect to claim 18, Char discloses titanium oxide, aluminum oxide, gallium oxide, and cobalt oxide (p. 16, lines 4-8).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Higuma et al.** (US 2001/0050221 A1).

With respect to claim 14, Higuma discloses an infrared detector (Figures 1 and 2) comprising: a thermal resistor **5** composed of a metal oxide having a perovskite structure [0005,0028,0029]; a stress applying unit **13** operable to apply a stress (current) to the thermal resistor **5**; a detecting unit **2** (including measuring means) operable to, in a state where the stress is being applied to the thermal resistor **5** by the stress applying unit **13**, detect an amount of received infrared light using the thermal

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resistor [0031]; and a changing unit (current adjustment means) operable to cause the stress applying unit to change an intensity of the stress [0031]. Although Higuma does not specifically disclose a detecting unit operable to detect an amount of received IR light, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide detecting unit as claimed in order to interpret the output signal provided by the IR detector of Higuma and apply the results.

Allowable Subject Matter

8. Claim 15 is allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 15, the prior art teaches a memory cell comprising a perovskite metal oxide sandwiched between two electrodes configured to provide an electric field there within the oxide, and a detecting unit (see Shien et al., JP 2004-349691). However, the prior art of record fails to disclose a perovskite metal oxide thermal resistor and electric field applying unit arranged to sandwich an insulator, and a detecting unit operable to detect and amount of received IR light on the thermal resistor. Claim 16 is allowable based on dependence from claim 15.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASEY BRYANT whose telephone number is (571)270-1282. The examiner can normally be reached on Monday - Friday, 8am - 5pm, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Casey Bryant
Patent Examiner
August 13, 2008

/Christine Sung/
Primary Examiner, Art Unit 2884